NO. 14422

United States
COURT OF APPEALS
for the Ninth Circuit

THE UNITED STATES NATIONAL BANK OF PORTLAND, OREGON, TRUSTEE, and WALTER G. E. SMITH,

Appellants,

vs.

FABRI-VALVE COMPANY OF AMERICA, a corporation,

Appellee.

FABRI-VALVE COMPANY OF AMERICA, a corporation,

Appellant,

vs.

THE UNITED STATES NATIONAL BANK OF PORTLAND, OREGON, TRUSTEE, and WALTER G. E. SMITH,

Appellees.

BRIEF OF THE UNITED STATES NATIONAL BANK OF PORTLAND, OREGON, TRUSTEE, and WALTER G. E. SMITH, APPELLANTS AND CROSS-APPELLEES

Appeals from the United States District Court for the District of Oregon.

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Appeals from the United States District Court for the District of Oregon.

The District Court adjudged claim 3 of the Smith patent No. 2,001,271 to be infringed by the manufacture

and sale of gate valves as exemplified by defendant's gate valve bonnet Type A and by defendant's gate valve bonnetless Type B, as shown and illustrated by defendant's Exhibit D, plates 2 and 3, respectively. [Conclusions of Law No. II, p. 34, and Judgment, p. 35, Transcript of Record.]

Appellants, The United States National Bank of Portland, Oregon, Trustee, and Walter G. E. Smith, have appealed from the judgment of the United States District Court for the District of Oregon, wherein the Court found, adjudged and decreed:

> "The accused machines have recesses but do not have cavities and I therefore find that claims 1, 2, 5 and 6 have not been infringed." [Oral Opinion Dec. 31, 1952, p. 19, and Finding of Fact No. XI, p. 29, Transcript of Record.]
>
> "In this case * * * the patented structure represented only a minor improvement in a highly developed art * * *."
>
> "I find that a reasonable royalty is 1½% of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952, which, according to my calculations, amounts to $2,962.16." [Oral Opinion, June 17, 1953, p. 22, and Finding of Fact No. XIII, p. 30, Transcript of Record.]
>
> "That plaintiffs have and recover from defendant general damages which shall be due compensation for the making, using and/or selling of the combination of the inventions of the Letters Patent in suit, which damages shall be in the principal sum of $2962.16, together with interest thereon at the rate of six per cent (6%) per annum from May 14, 1952, until paid." [Judgment, p. 35, Transcript of Record.]

JURISDICTION

The District Court had jurisdiction under the Patent Laws (Title 28, United States Code, Section 1338), which provides:

> "(a) The district courts shall have original jurisdiction of any civil action arising under any Act of Congress relating to patents, copyrights and trademarks. * * *"

Jurisdiction is pleaded in paragraph IV of the Bill of Complaint [Transcript of Record, p. 4]. This Court has jurisdiction of this appeal (Title 28, United States Code, Section 1291).

STATEMENT OF THE CASE

The Smith patent in suit, No. 2,001,271, relates to a valve for controlling the flow of pulp stock in a pulp mill. Pulp stock consists of the ultimate fibers of wood separated by treating wood chips in a digester at elevated pressures in the presence of an acid. The individual fibers "averages probably one-thousandth of an inch in diameter and from a sixteenth to an eighth of an inch long." [p. 107, Transcript of Record]. A slurry is made of the wood fibers and water and this mixture is conveyed through pipe lines under pressure and by gravity flow through flumes and header boxes in the pulp mill. Pumps and valves are mounted in the pipe lines and gates are provided in the walls of the header boxes for controlling and directing the flow of the pulp slurry. A header box in a pulp mill is similar to a header box in an irrigation

ditch and usually is equipped with gates in two or three of its side walls, which gates are employed to direct the flow from the header box to the desired flume [p. 111, Transcript of Record]. If all gates were to be closed and the flow to the header box continued, the slurry would overflow the header box in the same manner that a river would overflow a dam if all the gates in the dam were to be closed [p. 117, Transcript of Record].

A head gate of the type used to control the flow of water from an irrigation ditch is shown in the patent to Hedrick, No. 988,777. This same type of gate was used in the header boxes in pulp mills in the latter part of the year 1929 [pp. 93-94, Transcript of Record].

A valve is a device for controlling the flow of fluids in a pipe line, and is a completely enclosed structure so that pressure may be maintained on either or both sides thereof. A valve may be said to be a device for controlling fluids under pressure, whereas a head gate is a device for controlling the flow of fluids under gravity. Both valves and head gates are employed in a pulp mill.

Prior to the invention of the Smith valve the pulp and paper mills used plug valves—a cylindrical casing with a rotating plug with a round hole through the plug which could be brought into registry with inlet and outlet openings in the cylindrical casing. The fine fibers would collect between the rotating plug and the housing and become so tightly cemented therebetween as to make the valve difficult to operate. Another type of valve in use in pulp mills prior to Smith was the Reed valve—wherein a piston entered a cylinder to close inlet and

outlet orifices by blocking them off. The fine pulp would adhere to the walls of the cylinder and piston and make it impossible to move the piston to operate the valve [pp. 58 and 70, Transcript of Record].

The wedge type gate valve "is not a conventional stock valve to which the valves in suit more specifically relate" [p. 54, Transcript of Record] and each and every one of the witnesses called to testify at the trial of this case testified that wedge type gate valves were not used in pulp mills. Mr. Buckhorn, chief counsel for the defendant, addressed the Court thus:

> "Your Honor, I object to that last question and again for the reason that the wedge gate valve is not a conventional stock valve to which the valves in suit more specifically relate. The wedge gate valve is never used in a stock flow line but is used merely in clear fluid line, a clear water line or something of that sort. It is not a conventional valve in a conventional flow line." [p. 54, Transcript]

Wedge type gate valves are exemplified by patents to Belfield, No. 105,027; Hewes, No. 127,768; Allt, No. 233,180; Lunken, No. 494,579; Lunkenheimer, Nos. 494,-581 and 494,582; Patterson, No. 985,444; Snow, No. 1,179,047; Gill, No. 1,613,509; and Barker, No. 1,751,-122. The reason wedge type gate valves were not in use in pulp flow lines is that the valve gate, under control of the valve stem, is first moved to a position spaced longitudinally of the valve from the seat and is then moved into contact with the seat by some kind of wedging means which wedges the gate against the seat to close the valve. In the wedge type of valve there is no cleansing of the seat by the descending gate, or in fact

any contact between the gate and the seat until the gate has been lowered into position opposite the seat and is wedged against the seat by the wedging devices [p. 121, Transcript of Record]. If used in a pulp mill to control the flow of pulp, the fibers would adhere to the face of the gate and to the seat and prevent the valve from closing.

Smith conceived a valve particularly adapted for controlling the flow of pulp stock in a pulp and/or paper mill. He describes the problem to be solved in the following language:

> "Heretofore, in such valves, the pulp stock or other material tended to collect or lodge in the grooved valve seat, so that when the valve member is being closed the pulp is pressed between the valve and its seat and not only eventually prevents the valve from being entirely closed, but forms a hard tenacious, cement-like mass that resists the opening of the valve, and also lodges between the valve and the faces of the seat and tends to spring the valve member so that it is operated with difficulty." [Smith patent, col. 1, lines 5-15]

He then sets forth as the principal object of his invention the provision of a gate valve having means to prevent the accumulation of the pulp fibers on the valve seat. The principal object of the invention is stated as follows:

> "The principal object of my invention is to provide a gate valve especially adapted for controlling the flow of heavily laden material through a pipe line without permitting the lodging of material on the valve seat and the springing or bowing of the gate out of shape by material collected in the said seat, or by the pressure in the pipe line." [Smith patent, col. 1, lines 33-40]

A further disadvantage incident to the use of gate valves in pulp mills prior to the invention of the Smith valve was the fact that in prior art valves the groove for the gate extended all the way down the sides and across the floor of the valve and, as stated in the Smith patent, "the pulp stock or other material tends to collect in the guideways or grooves of [for] the gate and cause the latter to bind and makes it very difficult to operate. This is aggravated by the fact that the pulp, if permitted to dry, forms a hard glue-like substance from which the gate may only be broken away by taking the valve housing apart."

See also testimony of M. L. Edwards, describing this problem, at pages 109-110, Transcript of Record. Also testimony of Walter G. E. Smith at page 80, Transcript of Record.

A further object of the Smith valve was to provide a solution for this problem, and the Smith patent so states:

> "A further object of my invention is to provide a gate valve which will not accumulate material interfering with the closing of the gate, but is self-cleaning." [Col. 1, lines 41-44]

> "Further, the guide grooves in the housing walls for the gate are cut away at their lower ends on the inlet side by the said recess in the bottom of the housing, whereby material collecting in the said grooves may be cleared away by the downward movement of the gate." [Col. 1, lines 49-54]

Smith recognized two major problems in connection with controlling the flow of pulp stock in a pulp or paper mill: (1) the tendency of the pulp fibers to adhere to the face of the valve seat and to the face of the

gate and prevent the valve from closing; and (2) the accumulation of pulp stock in the guide groove for the gate, and particularly in that portion of the groove across the floor of the valve, which would prevent the gate from being lowered into the groove and into contact with the seat.

Smith solved these problems by omitting the wall of the groove for the gate across the floor of the valve, thus forming a recess on the inlet or upstream side of the gate, and by providing a gate which would scrape the pulp stock from the face of the seat into the recess. The Smith patent describes this structure and its function as follows:

> "By this construction any pulp stock or other material which may collect on the face *c'* of the housing part c is scraped off by the gate *h* into the recess *j* hence is prevented from being compressed or otherwise adhering to the valve housing, or interfering with the operation of the valve. When the gate is again opened, the material so collected in the recess will be carried away by the flow of material through the gate valve." [Col. 2, lines 41-49]

> "Further, the grooves *g* in which the gate *h* is slidable are cut away as at *m* at the bottom on the inlet side, down to the inclined bottom surface, *j*, see Figs. 1 and 5; thus any stock that has accumulated in said grooves is scraped off by the edge of the gate and discharged on to the bottom surface or floor of the housing and carried away with the next flow of material thru the gate valve." [Col. 3, lines 16-23]

Original claims 6, 7 and 8, submitted with the application for patent as filed, described the recess in the floor of the valve in the following language:

> "* * * a recess in the floor of said housing on the inlet side of said gate, said recess extending laterally whereby the walls of said guide grooves of the gate are cut away by the recess on the inlet side, * * *."

In the Smith valve the seat is on the downstream or outlet side of the gate. The seat is formed by the face *c'* of the housing part *c* and supports the gate against the thrust of the pressure of the inlet fluid as the gate is being closed. Since any pulp stock which has accumulated on the face of the seat, or in the guide grooves for the gate, is scraped off by the descending gate and discharged into the recess in the floor of the valve on the upstream or inlet side of the gate, when the gate is opened such material is flushed up and over the lower portion of the transverse wall which forms the seat and is carried away by the flow of material through the valve. In prior art patents for gate type valves, such as Gill No. 1,613,509, any such recess was on the downstream or outlet side of the gate and the wall of the guide groove on the upstream side caused the pulp stock to accumulate in the groove much in the same manner as snow accumulates or "drifts" on the lee side of a snow fence or other obstruction.

The patent recites that the outlet port in the Smith valve is formed V-shaped at the bottom, as at *l*,

> "whereby the outlet opening, as the gate is closed, is diminished laterally by the wall portion *l'* at an equal and uniform rate and the gate is thus supported at its sides as it is closed, and the pressure of the material on the gate, which increases relatively to the decreased size of the opening, is prevented from springing or bowing the gate against the outlet

> port, and thus interfering with the operation of the gate. This is particularly important for the reason that in providing the lower edge of the gate with a beveled edge, it is somewhat weakened, and the tendency to be bowed by the pressure of the stock is increased."

The V-shaped outlet opening was thought to be necessary should pipe line pressures run from 125 to 150 pounds per square inch, but, since "actual pulp mill pressure is rarely over 30 it made a lot of difference" [p. 87, Transcript]. The Smith valves are made with round outlet openings, and a 14 inch valve installed twenty years ago in the Crown Zellerbach mill at Camas, Washington, and having a round outlet opening is still in use [p. 78, Transcript]. Mr. Harold S. Hilton, sales engineer for the defendant company, designer of the infringing valves, testified that with the same area of opening of the outlet port the transverse wall of the infringing valve would provide the same amount of support for the gate as in the Smith valve.

Defendant's gate valves embody each and every structural element of the Smith valve. Defendant's gate valve bonnetless type B is substantially a Chinese copy of the Smith valve. Both the Smith valve and the infringing valve are made of several separate parts. In each valve the housing for the inlet port is bolted to the housing for the outlet port with a spacer plate positioned between the meeting ends of the housings to form a guide groove for the gate. In each of these valves the face of the end wall of the housing for the outlet port forms the seat and supports the gate against the thrust

of the pressure of the inlet fluid. In each valve any stock that has accumulated on the face of the seat or in the guide grooves is scraped off by the edge of the gate and discharged onto the bottom surface or floor of the housing on the inlet side of the gate and is carried away with the next flow of material through the valve. In each valve the wall of the guide groove for the gate is cut away (or omitted) on the inlet side of the gate, thus forming a recess (but not a groove) in the floor of the housing on the inlet side of the seat. In a valve in which the housing is of rectangular shape at mid-portion (as illustrated in the Smith patent) the recess in the floor of the housing extends laterally to such extent that the walls of the guide groove on the inlet side are cut away. In defendant's valves the housing is round, but in each valve (types A and B) the walls of the guide groove on the inlet side also are cut away by the recess formed in front of the "transverse wall" or valve seat.

SPECIFICATIONS OF ERROR

Appellants rely upon each of the errors assigned by them in the Statement of Points on Appeal, filed June 14, 1954. For convenience of the Court these assignments of error may be grouped and discussed by groups, as follows:

I. The District Court erred in finding claims 1, 2, 5 and 6 of the Smith patent in suit not infringed by valves manufactured and sold by defendant for the reason that each of these claims provides for cavities *at the bottom*

of the side wall on the inlet side, and the accused valves have recesses but do not have *cavities* [Oral opinion, December 31, 1952, p. 19, Transcript]. Statement of Points on Appeal, paragraphs numbered 1 and 2.

II. The District Court erred in holding that the patented structure of the Smith patent in suit represented only a minor improvement in a highly developed art [Oral opinion, June 17, 1953, p. 22, Transcript]. Statement of Points on Appeal, paragraph 3.

III. The District Court erred in refusing to use plaintiffs' established royalty as the measure of damages to be assessed against defendant for infringement of the Smith patent in suit, and in refusing to find that plaintiffs are entitled to receive as damages a royalty computed at the rate of five per cent of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952, which is the royalty established by all licenses given and granted prior to the commencement of the acts of defendant complained of [Oral opinion, June 17, 1953, p. 22, Transcript]. Statement of Points on Appeal, paragraphs numbered 5 and 7.

IV. The District Court erred in holding that plaintiffs were entitled to receive as damages royalties computed at a rate of no more than one and one-half per cent of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952, which royalties at such rate amount to $2962.16 [Oral opinion, June 17, 1952, p. 22, Transcript]. Statement of Points of Appeal, paragraph 4.

V. The District Court erred in refusing to find that plaintiffs were entitled to receive as damages additional royalties computed at the rate of seven and one-half per cent of the total sales price of all the valves sold by defendant in the eleven Western states between April 13, 1950 and May 14, 1952 in direct and unlawful competition with plaintiffs' licensee, Western Machinery Company [Findings of Fact No. XX, p. 24, Transcript]. Statement of Points on Appeal, paragraph 6.

SUMMARY OF ARGUMENT

I. The improvements which characterize the Smith valve, and which distinguish it from all gate valves known theretofore were new, novel and patentable at the time Smith made application for Letters Patent therefor. These improvements constituted a very real contribution to the art and provided a solution for a very real problem in the handling of paper and pulp stock.

The prior patents cited by the Examiner at the Patent Office during prosecution of the Smith application were not pertinent to the invention. The greater number of them relate to wedge type valves in which the gate does not contact the seat until the gate has been moved to closing position, so that there is no scraping of the seat by the gate in any such wedge type valve. Claims broadly defining the Smith invention were allowed notwithstanding the citation of such patents. The District Court found, therefore, that "the arguments of the law-

yer [who prosecuted the Smith application for Letters Patent] * * * and his attempt to distinguish Gill and Hedrick do not constitute file wrapper estoppel."

Plates 1, 2 and 3 of defendant's exhibit D show isometric views of the Smith valve and of defendant's bonnet type valve (type A) and defendant's bonnetless type valve (type B). These drawings show the gates, the grooves formed in the side walls of the housings, the transverse walls or seats which support the respective gates against the thrust of the pressure of the inlet fluid, the floor of each valve on the inlet side of the gate, the fact that each gate is provided with a cutting edge, and the recess in the floor of each valve on the inlet side of the gate formed by omitting the wall of the groove on the inlet side of the gate.

In comparing the valve structures as shown in these views, let it first be understood that the rings welded to the valve housing in defendant's bonnet type gate valve *are part of the housing*. It makes no difference whether defendant casts his housing in one piece or fabricates it from a number of pieces welded together. Welding makes the parts integral, and they are one. The Smith claims call for "grooves formed in the side walls of the housing". Grooves formed by spaced rings welded to the tubing in defendant's device are as much "grooves formed in the side walls" as grooves formed by so casting the housing in plaintiffs' device. Defendant is trying to make the Smith claims say: *"recessed into the side walls"*, and to make this mean something different than "formed in the side walls", which is the language of the claims.

Plate 2 of defendant's exhibit D shows defendant's bonnet type gate valve wherein the spaced rings 15 and 16 welded to the valve housing provide "grooves formed in the side walls". The ring 16 on the inlet side of the valve is cut away to provide a recess in the floor of the valve housing. The cut ends of the ring form V-shaped cavities wherein the V lies on its side, and thus the cavity shaped by the angle formed by the end of the ring with the circular wall is not wholly unlike the cavities in plaintiffs' valve. These cavities certainly do connect with the grooves within which the gate is slidable, and serve the purpose of assisting in the escape of material scraped off by the gate while being closed. This material escapes into the recess in the floor of the valve between the ends of the ring, from whence it is swept over the solid ring on the outlet side of the gate whenever the gate is opened.

Plate 3 shows defendant's bonnetless type gate valve wherein the lower half of the housing at the gate is made in a shape created by overlapping circles. The floor of the valve on the outlet side of the valve is on the arc of one circle, whereas the floor of the valve on the inlet side of the valve is on the arc of a circle whose center is spaced from the center of the first circle by a distance equal to the height of the transverse wall 15.

The differences between plaintiffs' and defendant's valves in this respect exist largely because of the difference in shape of the outlet port—one being round and the other square. If both were the same shape, then differences would disappear, because, basically, the same type of structural elements is involved.

Defendant says that the greater portion of the flange in the type B valve, and the lower ring portion of the type A valve, on the inlet side of the gate, are omitted. Defendant further says that these portions are omitted to eliminate the formation of a pocket at the lower end of the gate which might fill up with debris. Let the Honorable Court understand that the forward wall of the groove in plaintiffs' valve is removed *for exactly the same reason.* Each valve has the same features (in slightly different form) to serve exactly the same function. Defendant's valve is so closely a copy of plaintiffs' valve that it needs must take the novel features of plaintiffs' construction along with those portions which are conventional in valve construction. It is plaintiffs' contention that defendant's valve utilizes structural features which are the full mechanical equivalents of the same parts employed by plaintiffs and which perform the same functions, and that plaintiffs' patent is entitled to a range of equivalents which is inclusive thereof.

II. The structural features of plaintiffs' valve, which differentiate it from valves known and in use prior to December 3, 1930 (the date of filing of the application which matured as the Smith patent in suit) are these:

(a) The seat for the gate is on the outlet side of the gate, the gate being held against its seat during movement between open and closed positions by closely fitting grooves in the valve housing and by the force of the fluid flowing through the valve. Defendant's valve utilizes this feature of Smith's contribution to the art.

In single wedge type gates such as shown by Gill, Belfield, Lunkenheimer, Patterson, and others, the gate does not engage the seat until almost in the closed position, at which time it is wedged against the seat by the action of the wall 6 in Gill, the inclined ribs ff in Belfield, the wedging piece G in Lunkenheimer, and the guide surfaces KK in Patterson. These wedging elements thrust the gate forward against the force of the flow through the valve with a sudden motion, so that there is no contact with the valve seat by the descending valve, as in plaintiffs' and defendant's valves, until the gate is almost in closed position.

(b) Because it is held tightly against its seat, the gate in plaintiffs' valve is provided with a cutting edge to scrape material from the face of the seat and to plow material from the guide grooves away from the lower portion of the seat when the gate reaches closed position.

The Brooks patent shows a knife edge on the gate, which sharpened edge 19 is provided for cutting into short length objects of any appreciable length which may be passing through the valve. The gate 9 of Brooks is not expected to scrape material from the valve seat, for the reason that the seat is on the upstream or inlet side of the gate, and pulp fibers and the like material would not tend to adhere thereto, but, rather, to the outlet side of the groove. The knife edge of Brooks' gate would not scrape material from the walls of the groove on the outlet side of the gate for the reason that it does not contact that side of the groove, but, rather, is pressed

against the seat on the inlet side of the gate, as in the Gill, Patterson and Belfield patents.

Defendant's structure follows plaintiffs' teaching in this respect, and defendant's gate is made to scrape material from the valve seat on the outlet side of the gate.

> (c) The wall on the inlet side of the groove in which the gate slides is omitted at the floor or lower portion of the valve housing.

This structure is not shown in any prior art patent. The construction is practical for the reason that, once the gate is closed, the pressure of fluid on the inlet side of the gate holds the gate against the seat. The omitted wall of the groove provides a recess on the inlet side of the gate into which the material scraped from the guide grooves and from the face of the valve seat can collect without interfering with the action of the gate. This is an extremely important feature of the Smith valve, and defendant has copied this feature in an infringing structure.

> (d) The valve housing is so shaped [provided with cavities] at the lower ends of the guide grooves to enable material to flow from the grooves ahead of the descending gate. These "cavities" are the edge portions of the recess in the floor of the inlet side of the housing, and are provided to permit material to get away from the lower ends of the guide grooves.

There is no disclosure of this element in the prior art. Defendants' valves embody the full equivalent of

this feature by a structure which provides that the material which is removed from the grooves by the descending gate can flow away from the lower ends of the grooves and out into the recess created by the omitted forward wall of the grooves.

(e) In the Smith valve, the gate is made of sufficient length so that even in closed position it extends through the stuffing box so that accumulations of pulp in the bonnet cannot interfere with movement of the gate, as could happen in the valve where the entire gate descends out of the bonnet, leaving the empty bonnet to fill with pulp, as in Gill.

This feature is not shown in the prior art, for the reason that this type of construction was not known to the art before the advent of the Smith valve. Defendant employs the same construction in the valve shown on Plate 3. The construction is shown in the pictorial representation at the upper right-hand corner of the drawing.

(f) A transverse wall separating the inlet and outlet ports and provided with an opening, which wall supports the gate against the thrust of the pressure of the inlet fluid while the gate is being closed, whereby the cutting edge of the gate makes a relatively oblique cut through the material located in the opening.

No prior art patents show the transverse wall supporting the gate against the thrust of the pressure of the inlet fluid, the gate being held against the wall during

movement from open to closed position, to make an oblique cut through material located in the opening. Defendant's valves utilize this exact structure. The transverse wall of defendant's valves support the gate against the thrust of the pressure of the inlet fluid in exactly the same manner as does the transverse wall of the Smith valve. Defendant's own witnesses so testified.

III. Plaintiffs have proved the existence of *established royalties* by introducing in evidence copies of the licenses granted to Crane Company and to Crane Company of Canada for the exclusive manufacture, sale and distribution of the patented valves, except in the eleven Western states of the United States, for which the licensees paid a license fee or royalty of 5% of the sales price. These licenses were granted in 1938 and 1939, respectively. In 1945 plaintiffs granted an exclusive license to Western Machinery Company of Portland, Oregon, for the territory not covered by the Crane Company license. Western Machinery Company agreed to pay a license fee or royalty of 12½%, but it is understood that the royalty payment was split, 7½% to Smith for the use of drawings, specifications and patterns, and 5% to the owners of the patent as royalty for the manufacture, use and sale of the patented valve. Thus, it appears that in the United States two licensees enjoyed the exclusive right to make, use and sell the patented valve in their respective territories, and in Canada a third licensee acquired the exclusive right to make, use and sell the patented valve throughout that country. Each of the licensees was required to pay a royalty of 5% of

the sales price for the right to make, use and sell the valves.

The fact that there was but one license fee for a given territory does not prevent plaintiffs from establishing the fact of *established royalties*. In Reliance Construction Company et al v. Hassam Paving Company et al., C.C.A. 9; 248 F. 701, the Oregon Hassam Paving Company was granted the *exclusive* right, license and privilege to make, use and sell the patented invention within the state of Oregon. In that case the Ninth Circuit Court of Appeals held that the license fee was an *established* royalty. In Carley Life Float Company v. United States, 13 Pat. Q. 112, the Court of Claims held that in a suit against the United States to recover just and reasonable compensation for infringement, brought by the owner of the patent who had granted an *exclusive license* to manufacture and sell, the percentage of the selling price of the patented article paid by the exclusive licensee was a proper basis for the determination of the compensation due the plaintiff by reason of the infringement. The Court quoted with favor the excerpts from Clark v. Wooster, 119 U.S. 322, 326.

Plaintiffs also have proven the nature of the invention, its utility and advantages and the extent of use involved. Crane Company has been a licensee under the patent since 1938, and has supplied the Smith valve to the paper and pulp industry since that date. The advertisements running in Time Magazine, of which a tear sheet is in evidence in this cause (plaintiffs' exhibit No. 21), illustrates the general acceptance and utility of

the valve. The royalty paid was 5% of the sales price. The fact that defendant manufactured and sold infringing valves for which sales between the dates of April 13, 1950 and May 14, 1952—a period of two years and one month—amounted to $197,476.73, itself indicates the value and demand for the valve and the fact of its universal acceptance by the pulp and paper industry. The three licensees have assumed the patent to be valid, and respected plaintiffs' rights therein, and have continued to pay the required license fees up to the date of expiration of the patent, notwithstanding defendant's infringement thereof.

The Court has erred in finding that defendant shall have had the privilege of doing business under the patent for a less fee than was paid by the legitimate licensees. It should be the other way around. The language of the Ninth Circuit Court of Appeals in Reliance Construction Company et al. v. Hassam Paving Company, et al., supra, is a just and proper pronouncement of the equities in such cases. It will be remembered that in that case the Court held that the royalty charged an exclusive licensee, who invested capital and incurred the expense of preparing plants and entered into the business of supplying the patented articles, would be an *inadequate* royalty and measure of damages for infringement. The Court said:

> "For the infringer in this case to pay the licensee damages measured [in the figures of the same royalty as paid by a legitimate licensee] would not meet the demands of justice."

In General Motors Corporation v. Blackmore, 53 F. 2d 725, Circuit Judge Hickenlooper said that the infringer was not entitled to equality of treatment with the licensee, and certainly not preferential treatment. In the present case the Court has given the infringer preferential treatment by assessing a royalty of 1½% for the infringement, whereas the legitimate licensees have paid a royalty of 5%.

IV. In fixing a *reasonable* royalty for infringement [as differentiated from an *established* royalty], the primary inquiry is what the parties would have agreed to do, if both were reasonably trying to reach an agreement, in the determination of which the commercial situation must be considered.

In Egry Register Co. v. Standard Register Co., 23 F. (2d) 438, 443, the Circuit Court of Appeals for the 6th Circuit adopted the following theory of recovery on the basis of "reasonable royalty":

> "To adopt a *reasonable* royalty as the measure of damages is to adopt and interpret, as well as may be, the fiction that a license was to be granted at the time of beginning the infringement, and then to determine what the license price should have been. In effect, the court assumes the existence, ab initio of, and declares the equitable terms of, a supposititious license, and does this nunc pro tunc; it creates and applies retrospectively a compulsory license."

Pertinent to this subject is the statement of District Judge Clark, speaking for the Court of Appeals for the Ninth Circuit in The Filtex Corporation v. Atiyeh, 103 USPQ 197:

"As to what would be a reasonable royalty presents a serious question. Many factors determine a reasonable royalty other than the precise improvement. The entire unit must be considered. However, it must be borne in mind that the defendant in this case is the wrongdoer and as stated in Horvath v. McCord Radiator & Mfg. Co. et al., 100 F. (d 326-335, 40 USPQ 394, 402-403:

> " 'McCord is an infringer and the burden must be placed upon it as a wrongdoer and it is the duty of the Court to find for Horvath with reasonable approximation that to which he is entitled and in so doing, there is no duty to exercise meticulous care to avoid a hardship on McCord.'

"It is earnestly contended by the defendant that the royalty of ten percent allowed by the master was too high, but from an examination of the record we see no reason which would warrant disturbing the findings of the master or the finding of the trial Court sustaining his finding."

In the instant case it can hardly be expected that the plaintiffs would have granted defendant a license at a lesser royalty or license fee than prior licensees were paying. To do so would have been to grant defendant a preferential position in the trade—and when one considers the larger volume of sales by Crane Company and the years of its satisfactory operation under the license, it is inconceivable that plaintiffs would grant defendant a license that would be detrimental to the prior licensee.

V. Plaintiffs' losses are two-fold:

(1) Loss suffered by the United States National Bank, Trustee, of royalties computed at the rate of 5% of the total sales price of all valves manufactured

and sold by defendant between April 13, 1950 and May 14, 1952. Defendant's total sales of all valves manufactured and sold between April 13, 1950 and May 14, 1952 amountd to $197,476.73, and plaintiff, The United States National Bank, Trustee, is entitled to recover from defendant damages computed as 5% of this amount, which is the sum of $9873.84.

(2) Loss suffered by Walter G. E. Smith of 7½% of the total sales price of all said valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952. This statement of plaintiffs' losses is based on the assumption that plaintiffs' licensees would have manufactured and sold the valves which defendant manufactured and sold had defendant not infringed the Smith patent. This is believed to be a logical and safe assumption for the reason that the Smith valve has been universally accepted by the trade, and the Smith licensees were the only manufacturers of this type of valve up to the time of defendant's appropriation thereof. Since Western Machinery Company was an *exclusive* licensee for the territory of the eleven Western states, it is reasonable to assume that Western Machinery Company would have received orders for valves which defendant sold in this territory. Defendant's sales in the eleven Western states amounted to $179,617.93, and plaintiff, Walter G. E. Smith, is entitled to recover from defendant damages computed as 7½% of this amount, said damages amounting to $13,471.34.

ARGUMENT

There is error in the District Court's finding that the valves manufactured by defendant do not provide *cavities* in the side walls of the inlet ends of defendant's valve housings connected with the guide grooves in which to receive the material scraped off by the gate while being closed.

The Smith Valve

Plaintiffs contend that the "cavities connecting with said grooves in which to receive the material scraped off by the gate while being closed", as recited in claim 1 of the Smith patent, is one and the same thing as the recess *j* shown in the drawings, described in the specifications, and named as an element in claims presented during prosecution of the application.

It must be remembered that the principal object of the Smith invention was to provide a gate valve especially adapted to control the flow of heavily laden material through a pipe line without permitting the lodging of material on the valve seat and the springing or bowing of the gate out of shape by material collected on the said seat, or by the pressure in the pipe line [p. 1, col. 1, lines 33 et seq.].

The description of the valve in the Smith patent recites that the guide grooves in the housing walls for the gate are cut away at their lower ends *on the inlet side* by the recess in the bottom of the housing, whereby

material collecting in the grooves may be cleared away by the downward movement of the gate [p. 1, col. 1, lines 49 et seq.]. There is no description in the Smith patent of *cavities m* in the wall of the housing. The description of the valve says that the floor of the valve slopes downward from the inlet port *e* toward the seat *k* of the gate *h* to provide a recess *j*. The specification also says that the *grooves g in which the gate is slideable are cut away as at m* [it is the front wall of grooves *g* which are cut away] down to the inclined bottom surface *j*. In other words, insofar as the Smith valve is described in the patent, the reference letter *m* is intended to show where the groove *g* is cut away on the inlet side down to the inclined bottom surface *j* in order that stock which accumulates in the grooves, and which is scraped off by the edge of the gate, will be discharged onto the bottom surface *j* of the housing. From thence it may be carried away with the next flow of material through the gate.

The reason for cutting away the bottom portion of the *wall of the groove on the inlet side* is so that any stock that has accumulated in said groove, and which may be scraped off by the edge of the gate, will be spilled out of the groove onto the bottom surface or floor of the housing, to be carried away with the next flow of material when the gate is opened.

This fact is uncontrovertible: Smith did not describe a cavity *m*. The word "cavity" does not appear in the application as filed, nor in the specification of the patent as granted. *Smith did not use the letter m to point to*

a cavity in the side walls of the housing, but rather to a cut away portion of the inlet side of the wall of the groove *g*. This is the meaning of Smith's statement on page 1, column 1, lines 49 et seq., where he says:

> "The guide grooves in the housing walls * * * are cut away at their lower ends on the inlet side by the recess in the bottom of the housing."

It is the lateral extension of the recess *j*—the recess in the floor of the housing on the inlet side—which cuts away the wall of the groove *g* on the inlet side as shown at *m*.

Defendant's Bonnetless Type B Valve

Plate 3 of defendant's exhibit D shows a bonnetless type (Type B) of valve which incorporates all of the elements of plaintiffs' construction and closely resembles the Smith valve. The valve is made of a housing in two parts—an inlet part and an outlet part with a spacer plate interposed therebetween to form grooves in the side walls of the housing in which the gate slides. The wall of the grooves on the outlet side is formed by the face of the outlet portion of the housing, and this face forms the transverse wall against which the gate slides, exactly as in the Smith valve. Because of the closely fitting walls of the grooves, *the gate slides against the face of the transverse wall* as the gate moves from open to closed positions.

In defendant's valves the gate is tapered or beveled at its lower edge *towards the outlet side* to form a knife edge to scrape material from the face of the transverse

wall and to plow material from the guide grooves and away from the valve seat as the gate approaches closed position.

In defendant's valve, shown on Plate 3 of defendant's exhibit D, *the floor of the inlet side of the housing inclines downwardly toward the cutting edge of the gate when in closed position.* This can best be seen by examination of the side elevation of the valve shown at the upper left-hand corner of defendant's Plate 3.

The recess formed in the floor of the inlet side of the housing extends laterally (from side to side of the housing) and cuts away the walls of the grooves for the gate on the inlet side so that material scraped off the face of the "transverse wall" can be received into the recess in the floor of the housing. The Smith patent describes the "cavities" in the side walls of the housing as:

> "The guide grooves in the housing walls for the gate are cut away at their lower ends on the inlet side of the said recess in the bottom of the housing, whereby material collecting in said grooves may be cleared away by the downward movement of the gate." (p. 1, col. 1, lines 49-54)

The structure as thus described in the Smith patent is duplicated in the valve shown on Plate 3 of defendant's exhibit D.

The outlet housing in defendant's valve frames a round opening, the lower end of which is arcuate instead of V-shape. The only differences between the valve shown in defendant's Plate 3 and the Smith valve are (1) the shape of the opening through the transverse wall

which forms the valve seat, (2) the fact that the lower end of defendant's gate is arcuate whereas the lower end of the Smith gate is rectangular, and (3) the *shape* of the "cavities" at the bottom of the grooves in which to receive the material scraped off by the gate while being closed. Defendant's drawing on Plate 3 does not show the shape of the housing which creates the "cavities" connecting with the grooves in which to receive the material scraped off by the gate while being closed, but an examination of plaintiffs' exhibit 9 reveals the presence of this element created by extending the recess in the floor of the housing sufficiently far enough to each side to cut away the walls on the inlet side of the groove, and this is exactly the same way that the "cavities" are created in the Smith valve, the only difference being in the shape of the cavities caused by the difference in the shape of the opening through the valve.

Mr. Hilton, designor of defendant's valves, testified that the transverse wall of defendant's valve *supports the gate against the thrust of the pressure of the inlet fluid while the gate is being closed,* and that when the area of this opening through defendant's valve is approximately the same as the area of the opening through the Smith valve, the support for the gate is approximately the same. His testimony follows:

> "Q. I believe you testified that all of these gate valves required what you are pleased to call a transverse wall; is that true?
>
> A. That is correct, on the outlet side they all have a complete circular seat.
>
> Q. Some kind of a seating support there to support the gate?
>
> A. That's right." (Transcript, p. 158)

* * *

Q. One more thing that brings up. Because of the difference in shape of the openings in this, in plaintiffs' valve is a V-shaped opening, and when the gate is lowered to say within a half inch of the extreme bottom of the opening, which leaves a certain area, I don't know how much, perhaps a square inch or half an inch, I don't know, I haven't figured it up, and the same thing happens in defendant's valves because of the crescent moon that it makes. The gate can come a great deal closer to the extreme bottom of the valve and still have the same amount of area because the area is in a longer, thinner line, but with the same volume of material going through the valve you would have approximately the same support on your transverse wall with the same area open. Do you agree to that, Mr. Hilton?

A. Well I would have to lie one across the other to measure it, but it sounds reasonable, yes." (Transcript, p. 159)

A comparison of the valve shown on Plate 3 of defendant's exhibit D with the Smith valve poses the following questions.

All other structural elements being alike, each a counterpart of the other, and employed in the same relationship in each of the valves:

(a) Is defendant's structure wherein the recess in the floor of the inlet housing extends to each side far enough to cut away the lower ends of the grooves for the gate the full equivalent of "cavities" provided in the side walls of plaintiffs' structure, where in both plaintiffs' and defendant's valves the "cavities" connect with said grooves to receive the material scraped off by the gate while being closed?

(b) Is the arcuate lower end of the opening through the transverse wall in defendant's structure the full equivalent of the V-shaped lower end of the same opening in plaintiffs' structure, no reason being assigned for changing the shape of said opening other than to avoid the claims of the Smith patent?

Defendant's Bonnet Type A Valve

Plate 2 of defendant's exhibit D shows a valve having an inlet port and an outlet port and a gate slidable between said ports in grooves formed by parallel rings mounted on the inner walls of the tubing forming the housing. Mr. Hilton, who designed defendant's valves, testified that the ring 15 in the valve shown in defendant's Plate 2 functions as a transverse wall. His testimony follows:

> "Q. And in the structure shown on Plate 2 which, I believe, is the Exhibit O, the ring, the solid ring, the complete ring in that structure functions as a transverse wall; is that true?
>
> A. That is correct. That is the seating ring on the outlet side of the bonnet type, yes."

The ring 16 is cut away adjacent the floor of the inlet side of the housing to form a recess for receiving material scraped off the transverse wall by the gate while being closed. Mr. Hilton testified:

> "Q. And some of the fibers, you say, which collects in the groove is pushed ahead of the gate and out of the groove and onto the floor of the valve; is that correct?
>
> A. Well, it would have to to close the valve, yes." (Transcript, p. 53)

* * *

Q. In the valves wherein you have parallel rings mounted to make the groove for the gate, the ring on the upstream side or the inlet side of the valve is cut away at the bottom of the valve for what purpose?

A. The same reason that this is cut away." (Transcript, p. 56)

[The witness was referring to plaintiffs' Exhibit 7 showing the wall on the inlet side of the groove cut away adjacent the floor of the valve.] It will be seen that the ring 16 is cut away adjacent the floor of the inlet end of the housing in defendant's valve of Plate 2 to form a recess for receiving material scraped off of the transverse wall by the gate while being closed.

Mr. Smith testified that in the valve illustrated on Plate 2 the recess between the ends 17 of the ring 16 is the equivalent of the Smith structure wherein the depressed floor in the inlet housing forms the recess *j*. (Transcript, pp. 114-115). His testimony in this respect was not traversed.

In the valve structure shown on Plate 2 of defendant's exhibit D, the rings 15 and 16 must be considered as being an integral part of the walls of the housing, since they are welded thereto and are made a permanent part thereof. It will be noted that the ends 17 of the ring 16 are cut away adjacent the floor of the valve and form "cavities" whereby material collecting in the groove may be cleared away by the downward movement of the gate. In other words, the purpose and function of the cut away ring 16 in defendant's structure is exactly the same as the "cavities" in the side walls of the inlet hous-

ing of the Smith valve. Plaintiffs contend, therefore, that the cut away ring 16 creates a "cavity" connecting with the grooves in which the gate is slidable in which to receive the material scraped off by the gate while being closed. Else why was a portion of the ring removed? To prevail, must plaintiffs' claims say, "a portion of the *wall of said inlet side being cut away* to create a cavity connecting with said groove to receive the material scraped off by the gate while being closed"? Certainly, the word "cavities" (which plaintiffs' patent defines as being formed by the recess in the bottom of the housing) is of sufficient scope to cover a structure created by the same means to perform the same function in substantially the same manner to accomplish the same results.

Mr. Smith testified that the *bottom* of the housing in defendant's valve is a surface marked by a plane extending from the inner edge of the inlet port 11 to the inner surface of the ring 15, and that beneath this plane, in the area between the ends 17 of the ring 16, is the *recess* in the floor of the inlet housing. The testimony was not controverted. Using the language of the Smith patent: "any pulp stock or other material which may collect on the face *c'* of the housing part *c* is scraped off by the plate *h* into the recess *j*, hence is prevented from being compressed or otherwise adhering to the valve housing, or interfering with the operation of the valve." Mr. Hilton testified that the purpose of this recess is "so that it [the groove] will not trap any material in between the two seats like a wedge gate, as you have indicated, and build it [an accumulation of pulp] up so you cannot shut it [the gate]." (Transcript, p. 54)

A comparison of defendant's valve shown on Plate 2 with the Smith valve poses the following questions:

(c) The rings 15 and 16 of defendant's valve structure being welded to and made a part of the walls of the valve housing, are the grooves formed by said rings the full equivalent of "grooves formed in the side walls of said housing" as recited by the claims in the Smith patent?

(d) Is the ring 15 of defendant's valve structure the full equivalent of "a transverse wall separating the inlet and outlet ports" as called for by the claims in suit, 3, 5 and 6?

(e) Is the area between the ends 17 of the ring 16 in defendant's valve structure the full equivalent of the recess *j* of the Smith valve, in which to receive material which may collect on the face of the ring 15 and be scraped therefrom by the gate 14 while being closed?

(f) Are the cavities formed by the cut away portion of the ring 16, adjacent the ends 17 [the ring 16 being an integral part of the housing wall] the full equivalent of "cavities in the walls of the inlet side of the housing connected with the grooves in which to receive the material scraped off by the gate while being closed"?

If these questions can be answered in the affirmative, then plaintiffs must prevail.

Defendant says that in both of defendant's valves the defendant simply omits or terminates the outwardly ex-

tending flanges or rings defining the gate grooves at a point above the bottom of the valve and on one side of the gate, thereby permitting escape of pulp stock which is pushed downwardly by the descending gate (p. 6). Defendant says that such termination of the gate groove is shown by certain ones of the prior art (p. 6), *but not on the inlet side of the valve. This was a novel concept on the part of Smith, and defendant copied him!* The defendant says that whether such omission is made on the inlet or outlet side of the gate is of no moment. *But defendant copied the structure!* And defendant well knows that to change relative location of parts *when function is changed,* as in the instant case, amounts to invention! 69 C.J.S. 284.

Law Relating to Substitution of Equivalents

> "What shall it profit a patentee that his patent is declared valid if his claims are so precisely read, the range of equivalents so narrowly confined, that piracy is rewarded for the cunningness of its dissimulation and the patentee is robbed of the fruits of his invention?"
>
> —Circuit Judge Hutcheson.

In applying the law relating to substitution of equivalents, Circuit Judge Hutcheson, of the Circuit Court of Appeals for the Fifth Circuit, in Matthews et al. v. Koolvent Metal Awning Company, 158 F. 2d 37; 71 USPQ 219, says:

> "We are not concerned here with determining whether defendant's device, which plaintiffs charge is an infringement of the Matthews patent, is exactly the same in appearance or in form, but merely

whether it is substantially the same function. In short, the decisive question here is reading the claims of plaintiffs' patent on the Koolvent awning and interpreting them fairly in accordance with their plain intent and coverage, does defendant's device infringe? We think it does. The doctrine of equivalency has never been a mere dry bones doctrine. Put forward to do justice and prevent defrauding by dissimulation and deceit, it should be, it has been, applied to give its equitable purpose effect. Not at all recondite or difficult of understanding or application, it is the mere expression and application of the view that like things are alike and that they are not made unlike by formal and nonsubstantial changes, no matter how cunningly contrived the dissimulation, how clever the changes in form. We think it clear that defendant's device is substantially identical in function with, and is an infringement of, claims three, four, five, nine and ten of the Matthews patent.

"The judgment is reversed, and the cause is remanded for further proceedings consistent herewith."

The pronouncement of the Circuit Court of Appeals for the 7th Circuit in Union Asbestos & Rubber Company v. Gustin-Bacon Manufacturing Company, 169 F. 2d 686; 78 USPQ 238, is an answer to defendant's contention that plaintiffs are limited to a transverse wall provided with an opening having its lower end formed V-shape. The Court's decision recites that the patent was granted in a crowded art and that the claims must be strictly construed in the light of the specification. The patent specification discloses the use of asbestos as its preferred embodiment of a "heat insulating fiber filling material", and the alleged infringer used a glass fiber filler for such purpose. Circuit Judge Spark said:

"Each constitutes a filler of heat insulating fiber filling material, and they differ only in kind. They perform the same service, in the same manner, by the same means and for the same purpose.

"* * * True the specification refers neither directly nor indirectly to any sort of a filler except asbestos, yet applicant was only required to set forth his preferred sort of filler material, as defined by the claim, and by so doing he would not be precluded from protection against the use of any sort of filler material which would fully meet the requirements of the claim."

District Judge Ridge, of the District Court of the Western District of Missouri, in Cissell v. Cleaners Specialties, Inc., 81 F.S. 71, 79 USPQ 395, in a rather extended discussion of the law relating to substitution of equivalents, makes these observations:

"There is a structural difference between defendant's device and plaintiff's invention. Infringement is not avoided on that ground if defendant's device appropriates the principle and mode of operation of plaintiff's invention. Baldwin Rubber Co. v. Paine & Willins Co., 99 F. 2d 1, 5; 39 USPQ 455, 458-459 * * *.

"Plaintiff's invention relates to improvement in an apparatus for dispensing steam in the treatment of fabric in the art of dry cleaning garments. The claims allowed therefor by the Patent Office are a new combination of previously known elements in a novel, new and useful manner, providing a unitarily controlled method of dispensing steam of varying water content, and instantaneously changing the same in the treatment of fabrics in the dry cleaning industry. Such is the scope of plaintiff's patent. Gen. Motors Corp. v. Kesling, 164 F. 2d 824 [76 USPQ 30]. Form is not of the essence thereof, hence the mathematical measurements and structural differ-

ence of plaintiff's invention compared with defendant's device is of little consequence to the issue of infringement charged. Freeman v. Altvater, 66 F. 2d 506 [18 USPQ 186]. The combination of claims in plaintiff's letters patent is the measure of plaintiff's invention. Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 U.S. 405. Defendant's structure embodies every mechanism that is described in plaintiff's letters patent and each of the claims made therefor. If plaintiff's letters patent are valid, infringement is here present. Lourie Implement Co. v. Lenhart, et al., 130 F. 122; G. H. Packwood Mfg. Co. v. St. Louis Janitor Supply Co., 115 F. 2d 958 [58 USPQ 4]; General Ry. Signal Co. v. Great Northern Ry. Co., 43 F. 2d 790 [6 USPQ 314]; Wisconsin-Minnesota Gas & Elec. Household A. Co. v. Hirschy Co., 28 F. 2d 838."

One of the greatest living exponents of patent law, Chief Judge Learned Hand of the Circuit Court of Appeals for the 2nd Circuit, in the case of Philip A. Hunt Company v. Mallinckrodt Chemical Works, 177 F. 2d 583; 83 USPQ 277, has favored the patent bar with a discussion of the law relating to substitution of equivalents as applied to combination claims. The following excerpts from the decision in that case are particularly applicable to the facts in the instant case:

"If the claims were limited to the 'concise and exact terms' in which the specifications ordinarily describe a single example of the invention, few, if any, patents, would have value, for there are generally many variants well-known to the art, which will at once suggest themselves as practicable substitutes for the specific details of the machine or process so disclosed. It is the office of the claims to cover these, and it is usually exceedingly difficult, and sometimes impossible, to do so except in language that is to

> some degree 'functional'; for obviously it is impossible to enumerate all possible variants. Indeed, some degree of permissible latitude would seem to follow from the doctrine of equivalents, which was devised to eke out verbal insufficiencies of claims. Since by virtue of that doctrine a claim will cover whatever will accomplish substantially the same result by substantially the same means, it cannot be that a claim becomes invalid when it states expressly what the courts would in any event imply.
>
> * * *
>
> "Almost all inventions are combinations of old elements, whose selection as a new unit gives them their only importance. Their combination is the end or purpose of the 'invention': its 'nature and design' which the applicant must state. The elements of the combination are the means by which that 'nature and design' is realized; and nobody invades the patent who does not appropriate both end and means. To the extent to which variants, which will be serviceable as substitute means, are known to the art, and at once suggest themselves without need of further substantial experimentation, they are equivalents, and to extend the monopoly to them is not only justifiable but necessary to the protection of the inventor."

Plaintiff respectfully directs attention to the decision of the Circuit Court of Appeals for the 9th Circuit, in R. W. Pointer, doing business as Pointer-Willamette Company v. Six Wheel Corporation, 177 F. 2d 153; 83 USPQ 43, which affirmed the decision of the Honorable Claude McColloch, of the District Court for the District of Oregon, wherein District Judge Yankwich, speaking for the Circuit Court of Appeals, said:

> "These elements combine to produce the same results,—flexibility, equal distribution of the load, avoidance of excessive wear,—which the patent in

suit first taught the art. Whether, as the court found, both were known as proper substitutes for the mentioned elements.—Gould v. Rees, 1872, 15 Wall. 187, 193,—or not, the court found correctly identity of structure on the ground of equivalency." Citing authorities.

District Judge Clark, speaking for the Court of Appeals for the Ninth Circuit in The Filtex Corporation v. Atiyeh, 103 USPQ 197, found that there was but slight difference between the accused device and the device patented by the plaintiff. He held these slight differences to be immaterial, since the devices function in the same way to accomplish the same result. He cited the rule stated in the case of Sanitary Refrigerator Company v. Winters, et al., 280 U.S. 30-42, 3 USPQ 40, 44, and quoted from that decision, as follows:

"except where form is of the essence of the invention it has little weight in the decisions of such an issue; and, generally speaking, one device is an infringement of another 'if it performs substantially the same function in substantially the same way to obtain the same result. * * * Authorities concur that the substantial equivalent of thing, in the sense of the patent law, is the same as the thing itself; so that if two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape.' Machine Co. v. Murphy, 97 U.S. 120, and see Elizabeth v. Pavement Co., 97 U.S. 126-137. That mere colorable departures from the patented device do not avoid infringement, see McCormick v. Talcott, 20 How. 402-405. A close copy which seeks to use the substance of the invention, and, although showing some change in form and position, uses substantially the same device, performing precisely the same offices

with no change in principle, constitutes an infringement. Ives v. Hamilton, 92 U.S. 426-430. And even where, in view of the state of the art, the invention must be restricted to the form shown and described by the patentee and cannot be extended to embrace a new form which is a substantial departure therefrom, it is nevertheless infringed by a device in which there is no substantial departure from the description in the patent, but a mere colorable departure therefrom. Compare Duff v. Sterling Pump Co., 107 U.S. 636-639."

The Prior Patented Art

During the prosecution of the application for the patent in suit, the Examiner cited but four prior patents as primary references and but three prior patents as secondary references. The record shows that the patent to Glass was cited against nine of the claims submitted; the patent to Gill was cited against five of the claims submitted; Atcheson was cited against but three of the claims; and Bates was cited against but one of the claims. Hedrick was used as a secondary reference to modify the structure of the primary reference cited against three claims, and Summers was used as a secondary reference to modify the structure of the Bates patent cited against one claim.

Certainly this does not reflect a "highly developed art", and the fact that the Examiner has made use of so few patents against so few of the claims leads us to examine these patents to determine whether specific limitations contained therein were required, or whether the court may nevertheless construe the claims with a scope commensurate with the invention.

The patent to Glass discloses a slide valve wherein a tubular casing A is provided with a groove within which the gate B is seated. A rachet bar C is secured to the back of the gate or slide, indicating that the inlet is at the lower end of the casing as viewed in Figure 1. The gate or slide is equipped with inclined plates *z* which engage wedge shaped lugs *m-m* on each side of the back face of the gate and press the gate tightly against its seat. The gate or slide B is seated in opposition to the pressure of the fluid flowing through the valve, and in this respect is similar to single wedge type gate valves. The recess formed by the groove is on the outlet side of the gate, and, were the valve to be used to control the flow of pulp, the groove would fill with pulp and interfere with the operation of the gate. If the valve were used in a pulp mill and the flow of material reversed, the bonnet K would fill with pulp whenever the gate were closed and seriously interfere with the operation of the rack and pinion, and would hinder withdrawal of the gate from closed position. The Smith invention is not found in the Glass patent.

The patent to Gill discloses a wedge type gate valve wherein the wedge shaped gate 7 is moved in juxtaposition the seat 5 and then urged into seating engagement therewith by the wall 6. The flow of material through the valve is from inlet 3 to outlet 4, and the recess defined by a cutaway portion of the floor of the valve is on the outlet side of the gate. The face of the gate 7 does not scrape the seat 5, but, rather, is urged against the seat with a sudden movement after the gate is almost in wholly closed position. As stated by Mr.

Theodore J. Geisler, attorney for Smith during the prosecution of the application for patent, the groove 9 in Gill "is located on the outlet side of the gate, which, it is submitted, is not the equivalent of applicants' recess which is located on the inlet side of the gate, for the reason that Gill's recess would tend to form an eddy in which material would be liable to accumulate and to be pressed between the valve seat and the gate." There is no disclosure in the Gill patent which would teach Smith how to build the valve of the patent in suit.

The patent to Atcheson discloses a valve such as used to discharge the contents of paper-pulp digesters. The patent shows a box-like structure having a top H and bottom J, respectively. I and I′ are openings through the top and bottom, I being the inlet port and I′ the outlet port, respectively. F is the sliding gate which is pressed against the inner face H′ of the top H of the casing. The gate is set in opposition to the pressure of the fluid flowing through the valve. E (there are two of them) are wedges or inclines mounted on the side walls of the casing to press the gate F into seating relation with the inner surface H′ of the top H. Between the top and bottom walls is an area equal to the cubical area of the box, but which is on the outlet side of the gate. If the valve were set on end, the portion of this area below the level of the openings I and I′ would form a groove as in the patent to Glass.

Insofar as claims 1 and 2 of the Smith application call for a housing having inlet and outlet ports and a gate between said ports slidable in said housing, the

patent to Atcheson is pertinent. But there is no recess in the floor of the Atcheson valve on the inlet side of the gate, such recess being inclined toward the gate in closed position, and the openings I and I′ could be any shape.

The patents to Glass, Gill and Atcheson did not anticipate the structures of the claims against which they were cited. Our knowledge of the art proves these to be representative of the best art available to the Examiner. He cited the best art he had and left it to Smith or his attorney to show how the inventive concept was differentiated therefrom. It is true that it is up to the inventor to make claim to all that he believes himself entitled under the law, but where a claim includes a specific element in a specifically limited form, and such limitation is not required by the general terms of the patent nor by the state of the prior art, the Court may nevertheless construe the claim with a scope commensurate with the invention. I. P. Morris Corporation v. S. Morgan Smith Co., 34 F. 2d 525.

The patents to Glass, Gill and Atcheson as primary references, and the patent to Glass as modified by Hedrick, were disposed of in applicant's response to the first Office action. These patents were not again urged against the claims pending in the application. From then on, having established patentability of the invention, Smith's attorney struggled to so phrase the claims as to avoid rejection on the ground that they were inaccurate or indefinite. The attorney's difficulty in this regard can be appreciated only by reading that portion of the file wrapper beginning with the second Office action.

Modification of Prior Art Structures

Of the prior patents introduced in evidence by the defendant, each of the following listed patents discloses a single wedge type gate valve having a gate with but one face which is seated in opposition to the flow of fluid through the valve,—which is the reverse of the flow of fluid through the Smith valve. A single asterisk after the patent indicates that it shows a full groove all the way around the valve opening. The double asterisk indicates that there is a recess in the floor of the valve on the *outlet* side of the gate. Both Mr. Edwards and Mr. St. George testified that this type of valve would not be acceptable for controlling the flow of pulp in a pulp mill.

Patentee	Number	Full Groove	Recess in Floor of Valve on *Outlet* Side
Belfield	105,027		**
Allt	233,180		**
Lunken	494,579	*	
Lunkenheimer	494,581	*	
Lunkenheimer	494,582	*	
Patterson	985,444		**
Snow	1,179,047	*	
Summers et al	1,379,136		**
Gill	1,613,509		**

With respect to the type of valve shown in the above listed patents, Mr. Paul Theiss, testifying for defendant, said:

> "Q. (By Mr. Buckhorn): Mr. Theiss, does the patent specification disagree with you insofar as the intake and outlet sides are concerned?
>
> A. Yes, it does. * * *

Q. But it is your opinion that any engineer confronted with and having at his disposition a valve of the type shown in the Gill patent would take the end marked B as the inlet end of the valve?

A. Yes."

Mr. Theiss testified three times that the inlet end of the valve shown in the Summers et al patent was at the right-hand end of the valve as shown in Figure 1 of the drawing (Transcript, p. 183). Upon constant urging by defendant's attorney, he agreed that the valve could be operated in the opposite way. But he further testified (p. 184) that the valve is a one-direction valve, and, if this is true, then the flow through the valve must be from right to left as viewed in Figure 1. The patentee so describes it, and says that the flap valve 18 is to prevent a return of the fluid (p. 2, column 1, line 25, of the patent).

Likewise, Mr. Theiss testified that each of the strucsures of the Belfield patent, the Patterson patent, and the Heinecke patent should be installed in a manner opposite to that described by the patentee, and that, if so installed, there could be found parts in respective ones of these patented valves which would be the full equivalent of certain elements of the Smith valve. It will be remembered that both Mr. Edwards and Mr. St. George testified that it would be impractical to reverse the operation of these valves by installing them backwards; but the point plaintiffs are making at this place is that, as stated by the Commissioner of Patents in the matter of the appeal of the party Gee, 261 O.G. 800 (1918):

"In order to negative invention in a novel combi-

> nation it is necessary to find in the prior art not merely a device which might be modified to make this construction, but somewhere a suggestion, *not only that the modification ought to be made but how to make it.*" (Italics added.)

The language of the Commissioner of Patents is quoted with approval by the District Court of Connecticut in the case of Kulp v. Bridgeport Hardware Mfg. Corporation, 19 F. 2d 659 (1927), in which the court held that to negative invention in a novel combination it is necessary to find in the prior art, not merely a construction which might be modified to make the patented device, but a suggestion, *not only that the modification should be made,* but also how to make it.

The Circuit Court of Appeals for the 9th Circuit, in Bankers Utilities Co. v. Pacific National Bank, 18 F. 2d 16, held that anticipation is not made out by the fact that a prior existing device shown in a prior patent may easily be changed to produce the same result as that of the device of the patent in suit, where the prior device was in common use, *without it occurring to anyone to adopt the change suggested by the patent in suit.* To the same effect is the holding of the Circuit Court of Appeals for the 8th Circuit, in Diamond Power Specialty Corporation v. Bayer Co., 13 F. 2d 337, 341, wherein the court said that in considering prior patents as anticipations, *it is not permissible to modify the structures of such patents, and then claim the modified structures as anticipations.*

The decision of the Court of Customs and Patent Appeals in In re Lennie Wells, 414 O.G. 4; 53 F. 2d 537;

11 USPQ 165, seems to be especially appropos in the instant case. The court said:

> "It seems to have been the opinion of both the tribunals of the Patent Office that if the Pyles ratchet clutch were fitted to the Kammerdiner device, and should then be run backwards, appellant's device was fully anticipated * * *. The portion of Pyles' specification, heretofore quoted, plainly discloses that his device is intended to be rotated in one direction only.
>
> "The appellant's claims ought not to be rejected because of the possibility that if the Kammerdiner or Pyles devices were operated in some other manner, similar results would ensue to those secured by the use of appellant's device. It is well said in Topliff v. Topliff et al., 145 U.S. 156, 161: 'It is not sufficient to constitute an anticipation that the device relied upon might, by modification, be made to accomplish the function performed by the patent in question, if it were not designed by its maker, nor adapted, nor actually used, for the performance of such functions.'
>
> "An earlier device, which must be distorted from its obvious design, cannot be an anticipation. Block v. Nathan, 9 F. 2d 311."

In the United States Patent Office, the final authority regarding the patentability of alleged invention is the Board of Appeals. Its decisions are final and conclusive, unless appealed to the Court of Customs and Patent Appeals, or a suit is brought in the Court of Appeals of the District of Columbia under the provision of R.S. 4915; 35 U.S.C. Title 35, Sec. 63. The language of the Board of Appeals in Ex parte Halstead, reported at 37 USPQ, page 417, is appropos in the instant case:

"Most inventions are based on known scientific

facts or involve the bringing together, in new combinations, of known elements, but invention is not negatived by a mere showing that the elements are old or by showing that the facts underlying the invention are old, unless it can also be shown that these elements or facts can be brought together in such a way as to produce the claimed invention. As above stated, we are not satisfied that the references here relied upon teach the invention claimed."

Aggregation of Prior Art Elements To Anticipate Invention

The prior art is in evidence to show what was available for defendant's use; but the courts are unanimous in saying that defendant is not permitted to select elements from prior art patents and combine them in the manner taught only by the plaintiffs' patent in violation of the plaintiffs' rights. To grant to a defendant the right to use patentee's teaching as to how to combine separate elements taken from prior art patents does violence to the very purpose and intent of the patent system.

The following extract is taken from Johnson v. Forty-Second Street Railway Co., 33 Fed. Rep. 499; S.D.N.Y. 1888 (Patent No. 117,198 for a railway switch):

"The test to which this patent has been subjected—the test which is usually applied to all contested patents—is certainly severe, and is often misleading and deceptive. The defendant assembles every similar device, description, or suggestion in the particular art not only, but also in analogous, and even in remote arts. Everything which has the least bearing upon the subject is brought in and

> arranged by a skillful expert in an order of evolution which resembles most closely the invention which is the subject of attack. Having thus reached a point where but a single step, perhaps, is necessary to success, and knowing from the inventor exactly what that step is, the expert is asked if the patent discloses invention, and, honestly no doubt, answers in the negative. There is always the danger, unless care is taken to divest the mind of the idea added to the art by the inventor, that the invention will be viewed and condemned in the light of ascertained facts. With his description for a guide, it is an easy task to trace the steps from the aggregation to the invention."

In Bragg-Kliesrath Corp. v. Farrell, 36 Fed. Rep. 2d 845 (CCA 2-1929), the Court, in upholding Dickson Patent No. 1,076,189, for a vacuum power brake, stated:

> "It would reduce patent protection almost to a nullity if an infringer could, in the light of a subsequent disclosure, comb the prior art, and piece together portions of earlier patents, while dropping other parts, and thereby invalidate a new combination of old elements."

Defendant makes no use of any of the prior art valves. Although a very considerable number of valve patents have expired—all of which are available to whomsoever wishes to make use thereof—nevertheless, defendant copied plaintiffs' valve, and now seeks to excuse its acts by saying that the several elements can be found in the prior art.

Plaintiffs' Established Royalty as Measure of Damages

The pecuniary injury which a plaintiff incurrs by reason of a defendant's infringement of his patent is the measure of the damages which that plaintiff is entitled to recover on account of that infringement. Coupe v. Royer, 155 U.S. 565, 582, 39 L. Ed. 263; Goodyear v. Bishop, 2 Fisher 154, 158, Fed. Cas. No. 5,559, C.C., N.Y.; Graham v. Mfg. Co., 24 Fed. 642, 643, C.C. Wis.; Brickill v. Baltimore, 60 Fed. 98, C.C.A. 4. Such an injury is often called the plaintiff's loss. Suffolk Co. v. Hayden, 3 Wall. (70 U.S.) 315, 320, 18 L. Ed. 76; Cowing v. Rumsey, 8 Bltchf. 36, Fed. Cas. No. 3,296, C.C., N.Y.; McColb v. Brodie, 1 Woods 153, 161, Fed. Cas. No. 8,708, C.C., La.; LaBaw v. Hawkins, 2 Bann. & Ard. 561, 563, Fed. Cas. No. 7,961, C.C., N.J.; Duplate Corporation v. Triplex Safety Glass Co. of N. A., 298 U.S. 448, 451, 80 L. Ed. 1274; Beach v. Hatch, 153 Fed. 763, C.C., Mass.

The existing statute for awarding damages for infringement of Letters Patent is 35 U.S.C. 284, which reads as follows:

> "Sec. 284, Damages
>
> "Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court.
>
> "When the damages are not found by a jury the court shall assess them. In either event the court may increase the damages up to three times the amount found or assessed.

"The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances (R.S. 4919, 4921; 35 U.S.C., 1946 ed., 67, 70.)"

The magnitude of the loss sustained by plaintiff must always be ascertained, in order to ascertain the amount of the damages which he is entitled to recover. To ascertain the extent of the pecuniary injury which a particular infringement has caused a particular plaintiff, it is necessary to ascertain "the difference between his pecuniary condition after the infringement, and what that condition would have been if that infringement had not occurred." Yale Lock Co. v. Sargent, 117 U.S. 536, 552, 29 L. Ed. 954. If he availed himself of his patent by granting licenses to others to do the things which the defendant did without a license, *then that difference consists in his not having received the royalty which such a license would have brought him.* Seymour v. McCormick, 16 How. (57 U.S.) 480, 489, 14 L. Ed. 1024; New York v. Ramson, 23 How. (64 U.S.) 487, 490, 16 L. Ed. 515; Philips v. Nock, 17 Wall. (84 U.S.) 460, 462, 21 L. Ed. 679; Clark v. Wooster, 119 U.S. 322, 326, 30 L. Ed. 392; Tilghman v. Proctor, 125 U.S. 136, 143, 31 L. Ed. 664; Graham v. Mfg. Co., 24 Fed. 642, 643, C.C., Wis.; Timken v. Olin, 41 Fed. 169, 171, C.C., Ohio; Con. Rubber Tire Co. v. Diamond Rubber Co., 232 Fed. 475, C.C.A. 2; Empire Rubber & Tire Co. v. De Laski & Thropp Circular Woven Tire Co., 281 Fed. 1, C.C.A. 3; Muther v. United Shoe Machinery Co., 21 F. 2d 773, 775, D.C., Mass.

The primary method of assessing damages for infringements of patents consists in using the plaintiffs' *established* royalty as the measure of those damages. Clark v. Wooster, 119 U.S. 322, 30 L. Ed. 392; Seymour v. McCormick, 16 How. (57 U.S.) 480, 14 L. Ed. 1024; New York v. Ramson, 23 How. (64 U.S.) 487, 16 L. Ed. 515; Philip v. Nock, 17 Wall. (84 U.S.) 460, 21 L. Ed. 679; Tilghman v. Proctor, 125 U.S. 136, 31 L. Ed. 664; Graham v. Mfg. Co., 24 Fed. 642, C.C., E.D. Wis.; Timken v. Olin, 41 Fed. 169, C.C., S.D. Ohio, W.D.; Con. Rubber Tire Co. v. Diamond Rubber Co., 232 Fed. 475, C.C.A. 2; Empire Rubber & Tire Co. v. De Laski & Thropp Circular Woven Tire Co., 281 Fed. 1, C.C.A. 3; Muther v. United Shoe Machinery Co., 21 F. 2d 773, D.C., Mass.

The courts have always held that *established* royalties are the best measure of damages in patent causes. There is no conflict among the decisions, nor has there been since early pronouncements of the United States Supreme Court. For example, see Seymour v. McCormick, 57 U.S. 481, 489, 14 L. Ed. 1024 (1853) where Mr. Justice Grier wrote the opinion for the Court:

> "Where an inventor finds it profitable to exercise his monopoly by selling licenses to make or use his improvement, he has himself fixed the average of his actual damage, when his invention has been used without his license. If he claims anything above that amount he is bound to substantiate his claim by clear and distinct evidence."

In Clark v. Wooster, 119 U.S. 323, 326, 30 L. Ed. 392, the patentee, Wooster, brought suit against the firm of Johnson, Clark & Co. to restrain infringement of

patent and to recover profits and damages. The decree established infringement. Plaintiff adduced evidence to show that he had established a license fee of ten cents from each folding guide purchased or disposed of, and had granted licenses at that rate to divers sewing machine companies. Defendants alleged error in the court's finding that the measure of damages was an established license fee and that such fee was proved. Mr. Justice Bradley, speaking for the Court. said:

> "The third point, as to the measure of damages, and the want of proof thereof, is equally untenable. It is a general rule in patent causes, *that established license fees are the best measure of damages that can be used*. There may be damages beyond this, such as the expense and trouble the plaintiff has been put to by the defendant; and any special inconvenience he has suffered from the wrongful acts of the defendant; but these are more properly the subjects of allowance by the court, under the authority given to it to increase the damages.
>
> "As to the sufficiency of the proof, we see no occasion to disturb the conclusion reached by the master on this point. The complainant proved several instances of licenses given by him to large sewing machine companies, the fees on which were regularly paid, and corresponded with the rate allowed by the master. We think that the defendants have no occasion to complain of the amount awarded." (Italics added.)

In Faulkner v. Gibbs, C.C.A. 9, 199 F. 2d 635, 95 USPQ 400, Bone, Circuit Judge, an infringement suit was brought on patent No. 1,906,260, issued May 2, 1933, for a game device. The suit was brought in the U. S. District Court of the Southern District of California before Judge Yankwich, who found the patent valid

and infringed. The Circuit Court of Appeals for the 9th Circuit affirmed the interlocutory judgment of the District Court, 170 F. 2d 34. The Supreme Court of the United States granted certiorari and affirmed, 338 U.S. 267; 70 S. Ct. 25; 94 L. Ed. 62. Rehearing denied, 338 U.S. 896; 70 S. Ct. 236; 94 L. Ed. 551. Plaintiff had granted ten licenses which produced annual royalties ranging from $1000 to $3600 per year on sixteen unit banks of machines. The annual unit royalties varied from $20 to more than $40. Some of the agreements recited that the licensees were bound by outstanding injunctions and some of the agreements were made in compromise out of pending infringement suits for past infringement. Two of the agreements were in effect when the defendant began his infringing operation.

These circumstances led the court to hold that the case was not one for application of the established royalty rule, but set forth the following:

> "The statutory provision governing this question is 35 U.S.C.A. 70, the relevant portion of which is set out in the margin:
>
> > "' * * * and upon a judgment being rendered in any case for an infringement the complainant shall be entitled to recover general damages which shall be due compensation for making, using, or selling the invention, not less than a reasonable royalty therefor, together with such costs, and interests, as may be fixed by the court. * * *'
>
> Save for the omission of any reference to profits as a basis of recovery in infringement cases, this provision makes no change in the long-settled law on the subject. The infringement of a patent is a tortious taking, entitling the injured party to gen-

eral damages, measured ordinarily by the fair value of what was taken, i.e., the privilege of making, using or selling the patented article. *Where an established royalty for a license is proved, this is the best measure of the value of what was taken by the infringement.*

"In order that a royalty may be accepted as 'established' it must have been paid prior to the infringement complained of; it must have been paid by such a number of persons as to indicate a general acquiescence in its reasonableness by those who have had occasion to use the invention; and it must have been uniform at the places where licenses were issued.

* * *

"Where no established royalty can be proved, it is permissible to show . . . what would have been a reasonable royalty . . ." (Italics added.)

In Reliance Construction Co. et al. v. Hassam Paving Co. et al., C.C.A. 9; 248 Fed. 701, Gilbert, Ross and Hunt, Circuit Judges, suit was brought by Hassam Paving Co., a corporation of Massachusetts, the patentee of patent No. 861,650, and Oregon Hassam Paving Co., a corporation of Oregon, to whom the patentee had granted an exclusive license to use and to vend the right to use the patented invention within the state of Oregon, against defendants, alleged infringers.

The royalty charged by patentee was fifteen cents a yard for use of the patented process for laying pavement. The master found that a royalty of twenty-five cents a yard would be a reasonable royalty for recovery of damages. Defendants contend that the royalty charged by the patentee of fifteen cents per yard should be used

for computation of damages. The Court affirmed the master's findings and held:

> "It is obvious that the sum charged by the patentee as royalty to auxiliary companies, who receive exclusive licenses for a designated territory, and who invest capital and incur the expense of preparing plants, and enter into the business of supplying the patented article, would be an inadequate royalty and measure of damages for infringement. The patentee, in consideration of the benefit which it obtains from the act of cooperation of an auxiliary company, in introducing the patented improvement and exploiting it, thereby securing a far greater return for the use of its invention than could be obtained by dealing with individual users, may well afford to fix a low rate of royalty to such licensees. For the infringer in this case to pay the licensee damages measured in the figures of a royalty of 15 cents would not meet the demands of justice.
>
> "On a basis of 15 cents as a reasonable royalty for damages in this case, if the licensee is entitled to receive and retain the sum paid for damages, the patentee would receive nothing for the use of its patent. If, on the other hand, it is payable to the patentee, the licensee would receive nothing for the invasion of its exclusive rights under the license. We agree with the court below that the master's finding 'is as favorable to the defendants as they can reasonably ask or expect.' "

General Motors Corp v. Blackmore et al., presents a good summary of the doctrine of established and reasonable royalties. Circuit Court of Appeals, 6th Cir., 53 F. 2d 725; Hickenlooper, Circuit Judge. The case was brought on the law side of the court and was reveresd. The court, however, discussed the measure of damages as follows:

> "We accept the position that, where an 'estab-

lished royalty' is clearly shown, that is, a standard rate at which licenses were voluntarily and freely sold, such 'established royalty' must control; but this contemplates an absence of peculiar or special circumstances influencing any specific grant and an open, established market unaffected by attending relationships or collateral interests. Conceding that an 'established royalty' accurately reflects market value, and is the true equivalent thereof, licenses granted at other times, and between other parties, and upon private negotiations, as distinguished from sales upon an impartial basis, may be extremely helpful in determining the reasonable rate to be applied, but cannot be regarded as conclusive of market value. An exception to the general rate—the preferential treatment of one manufacturer, or even of a number of manufacturers who take out licenses—does not entitle an infringer to precise equality of treatment. The patentee may still recover such sum as would have been reasonable under all the circumstances of the case. And so, too, if there has been a general infringement, and the patent is in wide disrepute and openly defied, these individual and private compacts may even lose much of their probative force as indicating the reasonable royalty. This supposed condition of the market would not affect the amount of an established royalty, if such had been shown, even though it had caused such established royalty to be publicly fixed at a lower rate than would otherwise have been done; but that diminished royalty rate to which the patentee may have been driven in individual cases by the disrepute of his patent and the open defiance of his rights should likewise not be taken as the true measure of a reasonable royalty where no established royalty is shown. The reasonable royalty must still be determined from proofs of acceptance, utility, value, and demand, and upon the hypothesis that the patent was valid and would be respected. Compare Consolidated Rubber Tire Co. v. Diamond Rubber Co. (D.C. So. Dist. N.Y.—Judge Learned Hand), 226 F. 455."

Inadequacy of Damages Awarded by District Court

The District Court found that "a reasonable royalty of 1½% of the total sales price of all the valves manufactured and sold by defendant between April 13, 1950 and May 14, 1952." Total sales by the defendant during said period was $197,476.73 [Finding of Fact No. XVIII, p. 32, Transcript].

In 1938 a license was granted to Crane Company, and in 1939 a license was granted to Crane Company of Canada. These were exclusive licenses, save for the eleven Western states of the United States. Each of the licensees paid a royalty of 5% of the total sales price of the Smith valves. Crane Company advertised the valves in trade journals and magazines having nation-wide distribution. Plaintiffs' Exhibit No. 21 was taken from a copy of Time Magazine published at about the time of the trial of this cause.

Defendant's infringing valves rode to market on the wave of popularity of the Smith valve. The structure was well known to the trade—every pulp and paper mill on the North American continent is equipped with Smith valves for controlling the flow of pulp. Defendant not only infringed the Smith patent but it also trespassed the exclusive rights of the several licenses. To borrow the language of the Court of Appeals for the Ninth Circuit in Reliance Construction Co. et al. v. Hassam Paving Co. et al., 248 Fed. 701:

> "For the infringer in this case to pay the licensee damages measured in the figures of a royalty of 15 cents would not meet the demands of justice."

Likewise in this case, the demands of justice are not fully met by assessing damages against the defendant in the figures of the royalty paid by the legitimate licensees; and the District Court surely erred in granting to defendant a pecuniary reward for its unlicensed appropriation of plaintiffs' property.

Damages in Figures of Royalty Paid by Western Machinery Company

On December 4, 1945, plaintiff Walter G. E. Smith entered into an agreement with Western Machinery Company whereby he appointed the Western Machinery Company the exclusive agent to manufacture and sell gate valves under the Smith patent No. 2,001,271 throughout the eleven Western states. The contract provided:

> "2. First Party shall forthwith deliver to Second Party all of his drawings, patterns, specifications and other data applicable to the manufacture of said gate valves and hereby authorizes Second Party to use said property in connection with the manufacture of gate valves during the term of this contract. * * *
>
> "6. Second Party agrees to pay First Party a royalty of twelve and one-half (12½%) per cent of the net selling price of all gate valves sold by it. * * *

The aforementioned agreement is plaintiffs' Exhibit No. 12. The District Court is in possession of evidence of the value of said drawings, patterns, specifications and other necessary and useful data applicable to the manufacture

of gate valves embodying the invention disclosed by patent No. 2,001,271.

Western Machinery Company agreed to pay a rental fee for the use of said drawings, patterns and specifications in the figures of a royalty on sales of said gate valves of 7½% [Finding of Fact No. XX]. This was in addition to the royalty of 5% which Western Machinery Company paid for the right, license and privilege of manufacturing and selling the Smith valve.

The judgment of the District Court makes no award of any damages whatever for Smith's loss of rental fees caused by the trespass by defendant on the exclusive rights of licensee, Western Machinery Company. The loss of these rental fees is the pecuniary injury which the plaintiff Smith suffered by reason of defendant's infringement of his patent, and is the measure of damages which Smith is entitled to recover on account of that infringement. Smith availed himself of his patent by granting licenses to others to do the things which the defendant did without a license. The difference between Smith's pecuniary condition after the infringement and what that condition would have been if the infringement had not occurred consists in his not having received his share of the royalties which his license to Western Machinery Company should have brought him. If these damages may be assessed by using Smith's established rental fee as the measure of these damages, then Smith is entitled to recover from defendant 7½% of the amount of defendant's sales in the eleven Western states, to-wit: 7½% of $179,617.93, which amounts to $13,471.34.

CONCLUSION

The Smith structure was a new type of valve produced for a large and important industry as a solution for a troublesome problem. It was unlike any valve used by that industry before the summer of 1930. It was not a double wedge-type gate valve nor yet a single wedge-type gate valve, and certainly was not a plug-type valve, nor a Reed valve having a piston and cylinder construction. And, since it was not one of these types of valves, it cannot be classified as an improvement therefor.

The Smith valve is unlike anything produced by the prior art, so is not an improvement for anything to be found in the prior art. The patent is a pioneer patent, in that its structure is the first of its kind ever made available to the users of valves. As was said by the Supreme Court in Cimiotti Unhairing Co. v. American Fur Refining Co., 198 U.S. 399, 25 S. Ct. 697, 700:

> "It is well settled that a greater degree of liberality and a wider range of equivalents are permitted where the patent is of a pioneer character than when the invention is simply an improvement, * * *."

All the structural features of plaintiffs' valve, which differentiate it from the valves known and in use prior to December 3, 1930, have been appropriated by the defendant as the essential features of the infringing valves.

[3]There is substantial identity, constituting in-

fringement, where a device is a copy of the thing described by the patentee, either without variation, or with such variations as are consistent with its being in substance the same thing." Burr v. Duryee, 1 Wall, 531, 573.

"Except where form is of the essence of the invention, it has little weight in the decision of such an issue; and generally speaking, one device is an infringement of another 'if it performs substantially the same function in substantially the same way to obtain the same result.'" Machine Co. v. Murphy, 97 U.S. 120, 125.

"A close copy which seeks to use the substance of the invention and, although showing some change in form and position, uses substantially the same devices, performing precisely the same offices with no change in principle, constitutes an invention." Ives v. Hamilton, 92 U.S. 426, 430.

These pronouncements, found in early decisions of the Supreme Court of the United States, remain the law of the land to the present date. Defendant's differences in form, with no differences whatever in function or in relation to each of the other elements of the combination, constitute only "such variations as are consistent with its being in substance the same thing." Let the Honorable Court be not persuaded that parallel rings are otherwise than "grooves formed in the side walls of the housing", and that the cutaway portion of the ring on the inlet side of the gate constitutes anything other than "cavities connecting with said grooves in which to receive the material scraped off by the gate while being

closed." The "transverse wall" in the Smith patent is a *seating ledge* in defendant's valve, and without any new or unusual function attributable to a particular shape of opening, an opening of any one shape is the equivalent of an opening of any other shape in these valves. The location, purpose and function of these and other essentian elements are the same in plaintiffs' and defendant's structures.

To warrant a decision in favor of defendant will require that the Honorable Court find that plaintiffs' patent is of extremely narrow scope and that its range of equivalents is nil. In view of the fact that only ten out of the twenty-six claims submitted during prosecution of the application for Letters Patent were rejected on any art whatsoever, and that it was incumbent upon patentee (acting through his attorney) only to so word the remaining claims as to avoid the Examiner's objections that they were indefinite or inaccurate, it is clear that the record does not support defendant's contention that the file wrapper establishes that the invention is but a narrow improvement and not entitled to the benefit of the law relating to substitution of equivalents.

Plaintiffs respectfully contend that in equity and justice plaintiffs are entitled to judgment against defendant for wilfull infringement of the Smith patent, No. 2,001,271, and that plaintiffs recover damages in figures of royalties computed as follows:

For the United States National Bank of Portland, Oregon, Trustee, 5% of $197,476.73	$ 9,873.84

For Walter G. E. Smith, 7½% of $179,617.93	13,471.34
Total damages	$23,345.18

Respectfully submitted,

THE UNITED STATES NATIONAL BANK OF PORTLAND, OREGON, TRUSTEE, and WALTER G. E. SMITH,

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